Doc Code: AP.PRE.REQ

PTO/SB/33 (07-05)
Approved for use through xx/xx/200x. OMB 0651-00xx
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional)
50325-0802

Pursuant to 37 CFR 1.8(a)(1)(ii) I hereby certify that this correspondence is being transmitted to the United States Patent and Trademark Office via the electronic filing system in accordance with 37 CFR §§1.6(1)(4) and 1.8(a)(1)(i)(C) on the date indicated below and before 9:00 PM PST.

on _____

Signature /_____

Typed or printed name _____

Application Number	Filed
10/645,255	August 20, 2003

First Named Inventor
Fuyong Zhao

Art Unit	Examiner
2416	Jianye Wu

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a notice of appeal.

The review is requested for the reason(s) stated on the attached sheet(s).
Note: No more than five (5) pages may be provided.
XX

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record.
Registration number 56,543.

☐ attorney or agent acting under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34

/ZhichongGu#56543/
Signature

Zhichong Gu
Typed or printed name

(408) 414-1080
Telephone number

March 16, 2009
Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required.
Submit multiple forms if more than one signature is required, see below*.

☒ *Total of 1 forms are submitted.

This collection of information is required by 35 U.S.C. 132. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

ATTACHMENT TO PRE-APPEAL BRIEF REQUEST FOR REVIEW

Applicants respectfully submit that the following clear errors occur in the Final Office Action mailed December 15, 2008.

103(a) —*TERUHI, MOY* AND *RFC 2676*

The Office Action states clear factual errors in support of the rejection of Claim 1 under 35 U.S.C. § 103 (a) as allegedly being unpatentable over Teruhi et al., U.S. Pub. No. 2003/0072269 (hereinafter *Teruhi*) and J. Moy et al., IETF RFC 1247 "OSPF Version 2", July 1991 (hereinafter *Moy*) and further in view of Apostolopoulos et al., INTF RFC 2676 "QoS Routing Mechanisms and OSPF Extensions", August 1999 (hereinafter *RFC 2676*).

Claim 1 recites "selecting, from a set of routers, a particular router that is associated with a first actual time that is a shortest time among all times associated with routers in the set of routers ... wherein **the first actual time** has been updated with **a previous actual time** taken for a previous data packet to travel to a previous destination indicated **by the previous data packet**."

Thus, a particular router is associated with an actual time taken for a previous data packet to travel to a previous destination indicated by the previous data packets. The claimed actual time is a shortest time among all times associated with the routers.

The Office Action (page 5 lines 10 and 11) asserts that these recited features of Claim 1 are the same as "selecting a router from a set of routers which has **a shortest path** to a destination from a routing table" (emphasis added) in *Teruhi*. This is clear error. None of the cited references including *Teruhi* explicitly or inherently describes a shortest path in routing is measured by a time quantity, let alone actual times, as claimed.

The Office Action (page 6 line 19 – page 7 line 2) asserts that *RFC 2676* at Section 1.2 page 5 line 8 "teaches the shortest path in terms of traveling time." This is clear error. In OSPF, cost metrics relating to a link, which include the above mentioned propagation delay of a link, are configured parameters, having nothing to do with the actual time for a particular packet to travel to a destination. The excerpt in *RFC 2676*, as cited by the Office Action, reads "[s]pecifically, the extension to LSAs that we initially consider, include only available bandwidth and delay." The Office Action extrapolates "delay" in *RFC 2676* to be an actual time, with no factual support for the extrapolation. OSPF as described by *RFC 2676* has no description that equates delay with an actual time. The Office Action cannot point to any place

in *RFC 2676* that describes measuring actual times traveled by protocol packets.

A delay does not have to be associated with traveling; a delay may be due to processing speeds or queuing conditions at a sender, intermediate node or destination. *RFC 2676* neither explicitly nor inherently describes a delay as actual travel time of a data packet. Furthermore, even if a delay were an actual time for a data packet to travel to a destination, *RFC 2676* has no description of selecting a shortest path based on delay. Since OSPF as specified in *RFC 2676* includes available bandwidth information and other metric information other than delay, delay is not a deterministic criterion in selecting a shortest path in OSPF as described by *RFC 2676*, contrary to the Office Action's assertion.

The Office Action (page 3 lines 7-9) asserts that a "delay since last sender report DLSR" reported in RTCP-SR and RTCP-RR 74 of FIG. 4 and FIG. 5 of *Teruhi* can be used to calculate an actual time taken for a RTCP packet to travel from node A to node B. This is clear error.

Delay 74 in *Teruhi* is the difference between the receiving time of the last sender report and the generation time of the receiver report. *See* FIG. 9 of *Teruhi*. Both the aforementioned receiving time and generation time refer to two times measured by the same device, i.e., the receiver. As an interval between two times on the same node (destination node), delay 74 cannot possibly be an actual time traveled by a data packet. As indicated in FIG. 9 of *Teruhi*, even if delay 74 is known, since there are two unknowns, i.e., (1) a first travel time for a RTCP-SR from node A to node B and (2) a second travel time for a RTCP-RR from node B to node A. Neither of these two unknowns can be determined simultaneously from a single equation, as a matter of elementary logic.

As *Teruhi*, *Moy* and *RFC 2676*, taken individually or in combination, fail to disclose at least one element in Claim 1, Claim 1 is patentable over *Teruhi, Moy* and *RFC 2676*. Reconsideration and reversal of the rejection to Claim 1, and similarly to Claims 2-8 and 18-20, is respectfully requested.

103(a) —*CARO* AND *RFC 2676*

The Examiner has committed clear factual errors with regard to the rejection of Claim 1 under 35 U.S.C. § 103 (a) as allegedly unpatentable over Gianni Di Caro et al., "AntNet: Distributed Stigmergetic Control for Communications Networks", Journal of Artificial Intelligence Research, 12/1998 (hereinafter *Caro*) in view of *RFC 2676*.

Claim 1 recites "selecting, from a set of routers, a particular router that is associated with a first actual time that is a shortest time among all times associated with routers in the set of

routers, **wherein the first actual time has been updated with a previous actual time taken for a previous data packet to travel to a previous destination indicated by the previous data packet**" (emphasis added). On the other hand, *Caro* fails to disclose a number of features in Claim 1. For example, *Caro* only discloses selecting a neighbor based on **probabilistic values** stored in the routing table. There is no disclosure in *Caro* that the probabilistic values, as opposed to an actual time, are a previous actual time taken for a previous data packet to travel to a previous destination indicated by the previous data packet, as featured in Claim 1.

Indeed, since *Caro* selects a neighbor based on **probabilistic values**, if a shortest path is assigned with a 100% probability as essentially suggested by the Office Action, then the selection would be deterministic, rather than probabilistic. A deterministic approach is clearly against the operating principle of *Caro*.

The Office Action correctly concedes on page 9 that *Caro* (which the Office Action inadvertently refers to as "Teruhi") "**is silent on** the criterion is that the first packet is predicted to reach the destination in a shortest time (the first time)." However, the Office Action states that "[i]n the same field of endeavor, RFC 2676 further teaches routing the shortest path in terms of traveling time (delay, line 8 of first paragraph in Section 1.2, Page 5)." This is clear error. Contrary to the Office Action's assertion, as previously noted, OSPF as described in *RFC 2676* does not select a path based on an actual time traveled by a data packet.

There is no disclosure in *RFC 2676* for selecting, from a set of routers, a particular router that is associated with a first actual time that is a shortest time among all times associated with routers in the set of routers, **wherein the first actual time has been updated with a previous actual time taken for a previous data packet to travel to a previous destination indicated by the previous data packet**, as featured in Claim 1. The Office Action appears to seize upon the word "delay" in *RFC 2676* without considering what the RFC would have actually communicated or meant to a skilled person. Further, the Office Action cannot point to any place therein as either explicitly or inherently disclosing selecting a router based on a first actual time.

Moreover, a combination of the two references conflicts with the teaching of at least one of the references, and violates at least one principle of operation of the references.

A probabilistic model is fundamental to the operation of *Caro*. As described in the reference, all the steps, generating packets, selecting neighbor nodes to forward, updating routing information, etc., are all inextricably tied to the probabilistic model. For example, as *Caro* indicates on page 328 (item 7.i), "[t]he **statistical model** has to be able to capture this variability

and to follow in a robust way the fluctuations of the traffic. **This model plays a critical role** in the routing table updating process (see item (ii) below)" (emphasis added). Furthermore, according to *Caro*, routing performance is improved under the AntNet because of the use of probabilistic entries (on page 330, "**The use of probabilistic entries is very specific to AntNet** and we observed it to be **effective**, improving the performance, in some cases, even by 30%-40%. Routing tables are used in **a probabilistic way not only** by the ants **but also** by the data packets. This **has been observed to improve** AntNet performance, which means that the way the routing tables are built in AntNet is **well matched with a probabilistic distribution** of the data packets over all the good paths" (emphasis added)).

A combination of *RFC 2676* and *Caro*, as suggested by the Office Action, would remove the stated advantages gained by the probabilistic model of *Caro*. With the proposed combination, the probabilistic route selection in *Caro* is replaced with selecting a neighbor router that has a lowest amount of delay time from source node to the destination node in searching the best routing. Replacing *Caro*'s probabilistic model including selecting routers based on probabilistic values violates a fundamental operating principle of *Caro*. For at least this reason, a skilled person would not have considered combining *Caro* with *RFC 2676*.

As *Caro* and *RFC 2676*, taken individually or in combination, fail to disclose at least one element in Claim 1, Claim 1 is patentable over *Caro* and *RFC 2676*. Reconsideration and reversal of the rejection to Claim 1, and similarly to Claims 2-20, is respectfully requested.

Respectfully submitted,
HICKMAN PALERMO TRUONG & BECKER LLP

Dated: March 16, 2009

/ZhichongGu#56543/
Zhichong Gu
Reg.No. 56,543

2055 Gateway Place, Suite 550
San Jose, CA 95110
Telephone No.: (408) 414-1080
Facsimile No.: (408) 414-1076